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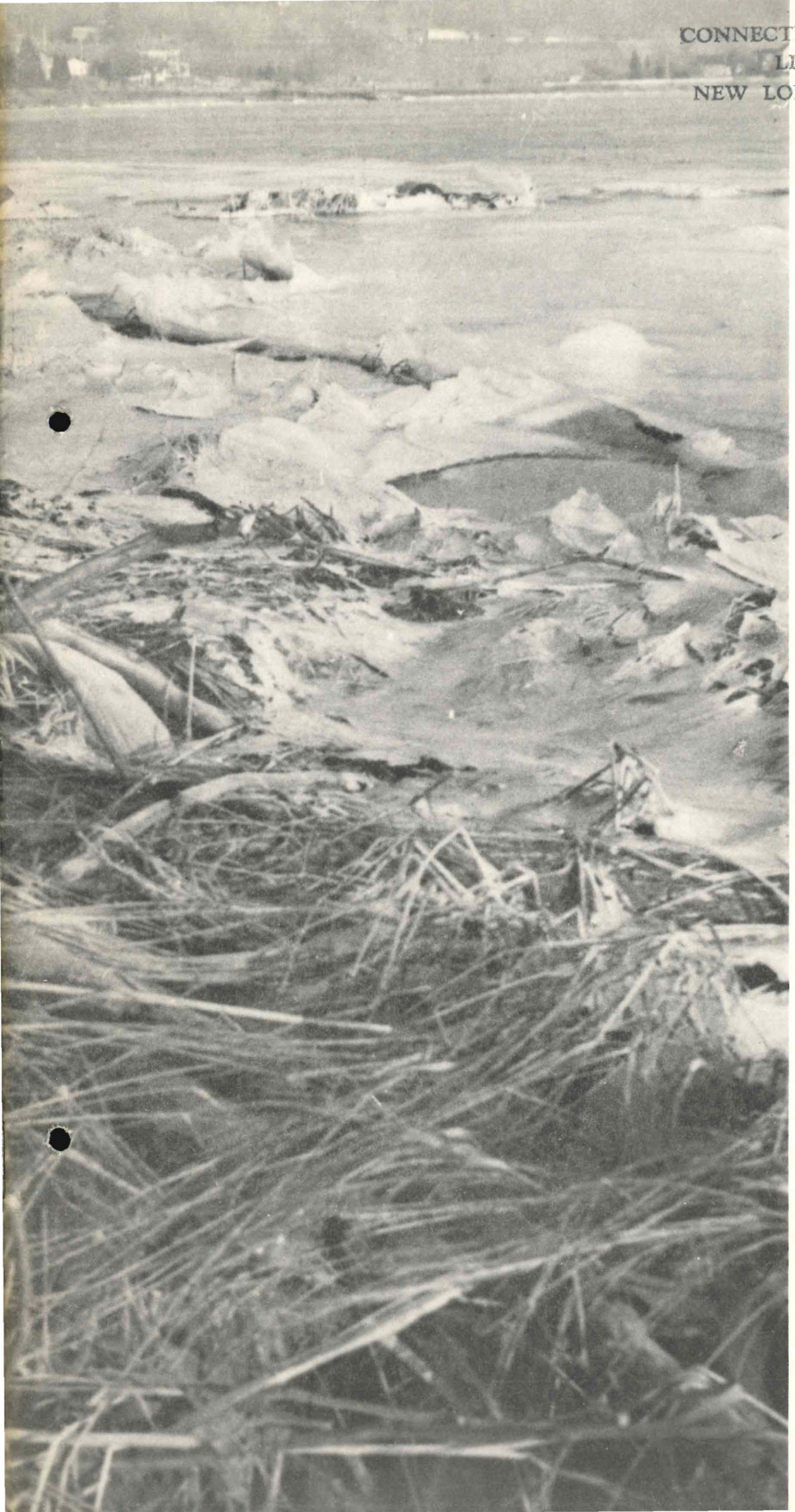

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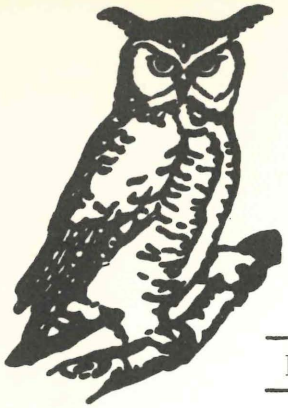

NATURALIST NOTEBOOK

DECEMBER 1970 VOLUME VI NO. 10

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"December in a Salt Marsh"
—Photo by R. Dewire

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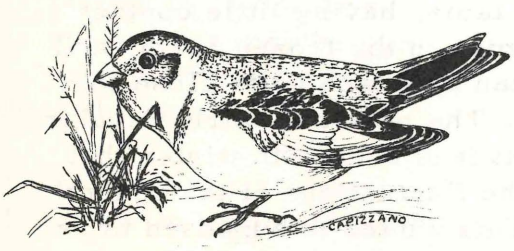
DECEMBER

The Month Of The "SNOWS"

By December, most birds that are coming as far south as Connecticut to spend the winter will have arrived. As can be expected in December, one may find several birds present that have the first name of "snow" or "snowy". There are four of these to look for and it is a real task to try and find all four in a single trip or even a single month in winter.

The most common one would be the slate-colored junco whose common name is "snowbird". They are present at most feeders and almost any woodland all winter. They also have the common name of "snowflake" because of the white outer tail feathers that flash when they fly.



Another small bird to look for is the snow bunting. It frequents the open beaches on the coast and is also found in low grassy fields where it feeds on weed and grass seeds. The bird is basically white with some black in the wings and brown on the back and neck. In flight the large patches of white in the wings and tail are striking, particularly when the buntings are travelling in flocks of 20 to 60 birds.

From these small birds we move to two large ones. The snow goose is a handsome bird that is found commonly in the West but is present in small numbers in the East.

The adults are all white with black wing tips. Young birds will still have brown mixed in with the white on the body. When looking for them in Connecticut, it is best to look carefully through any flocks of Canada geese that you may come across. One or two "Snows" may be with them as they seem to prefer the company of the Canadas. They will be easy to pick out of the flock of dark brown and black-necked geese. Locally wintering flocks of Canada geese can be found in the Niantic River, Pattagansett River, the mouth of the Connecticut River, and, until it freezes over, Bride Lake in Niantic.

The snowy owl is our final "snow" bird. Normally, this large owl stays in the tundra region and does not come as far south as Connecticut. Periodically, however, the owl's food supply of rodents becomes very scarce and when this happens the great birds have to move further south in search of food. In Connecticut they are usually found in open places such as beaches, marshes and fields. They sometimes choose strange places to sit, however, such as flagpoles and television antennas! Watch for what looks like a large mound of snow in an open area and you may have discovered the owl. They are quite tame, having little contact with man in the frozen north, and you can approach quite close to them. The owls are fairly regular in that it is every 4th winter that they come South following the fluctuations of the rodent and lemming populations. This winter is supposed to be the 4th one so watch for him.

Try and find all four this winter. Let us know if you are able to do so.

THE DECEMBER CALENDER

December is the month of cold bright days and holiday cheer.

December 2-15 ... The earliest sunsets occur on these evenings at 4:13 P.M.

December 4 ... Last year, this was the date of the first really hard frost.

December 9 ... Watch for wintering bluebirds in brushy field areas.

December 12 ... The full cold moon.

December 14 ... Wintering shorebirds include purple sandpipers and dunlins along the shore.

December 16 ... Venus shines at its brightest.

December 17-26 ... The shortest days of the year; nine hours and six minutes

December 19 ... Wintering hawks such as rough-legged hawks move into Connecticut in search of food.

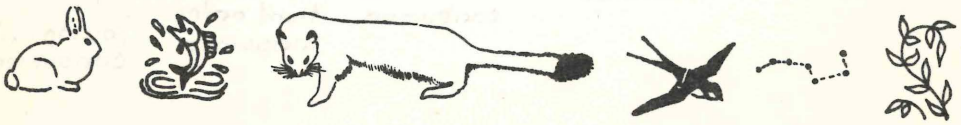
December 22 ... Winter begins at 1:36 A. M.

December 23 ... Hanukkah

December 25 ... Christmas day -- will it be white this year?

December 26 ... A strong nor' easter brought rain and snow here last year.

December 30-January 10 ... The latest sunrises of the year occur between these dates at 7:13 A. M.



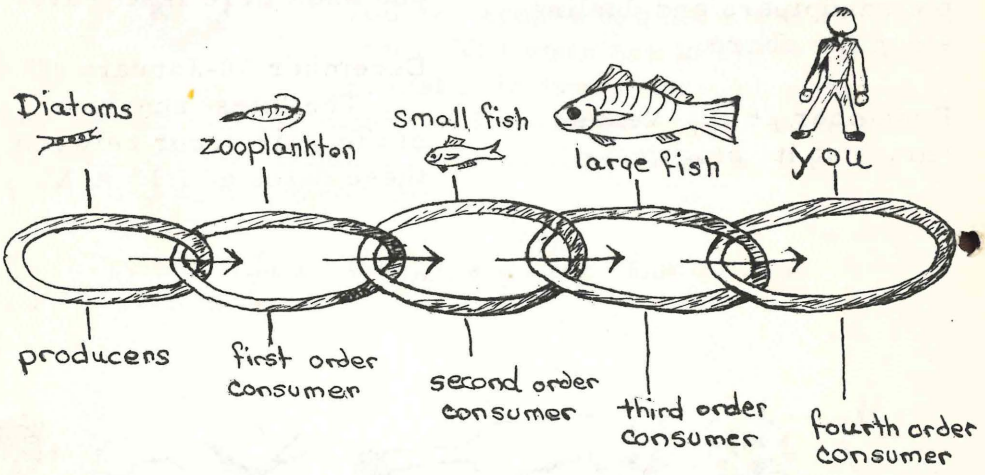
ALONG THE SHORE

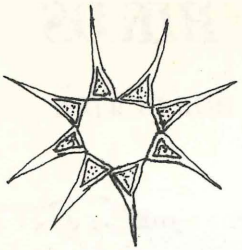
by BARBARA KASHANSKI

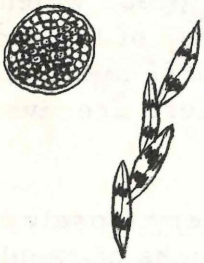
For many months I have written about many different kinds of animals that we might find along the shore. Not once though, have I mentioned the most important form of life--the first link in the food chain of all living marine animals--plankton. I'm sure you have all heard of plankton but just what is it and what does it look like?

The word plankton means "that which wanders", and plankton is made up of free floating, wandering tiny organisms that are too small and weak to get about on their own. These small organisms are most abundant near or just below the surface of the water where they are at the mercy of the tides and currents which move them from place to place.

Plankton is divided into two main groups--phytoplankton (plant plankton) and zooplankton (animal plankton). Phytoplankton are single-celled microscopic float-



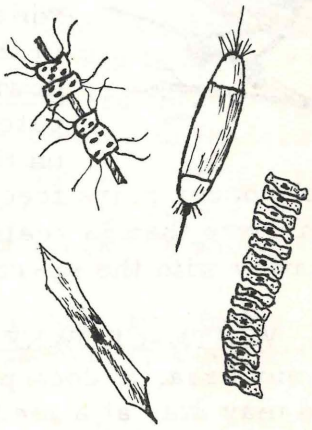




ing plants and at sea--as well as on land--the whole animal world depends on plants as the first basic link in every food chain. ONLY PLANTS CAN CAPTURE THE ENERGY FROM SUNLIGHT and use it to make sugars, starches, and proteins that animals live on. This energy in smaller and smaller amounts is passed up the food chain that might end with YOU.

Diatoms are the most abundant of the single-celled plant plankton. There are many different species of diatoms. Each species is different in shape and many are beautiful. Their silica shells may look like a pillbox, a golf tee, or even a cigar. Diatoms are so small that millions may live in a single gallon of sea water. Because of the very large numbers of diatoms they are sometimes call the "grass of the ocean." Don't forget their importance--single-celled or not--if there are no plants to start the food chain, there will be no animals.

Next month I'll write about zooplankton and a fascinating group called dinoflagellates--both of which are the next important link in the food chain of marine animals.

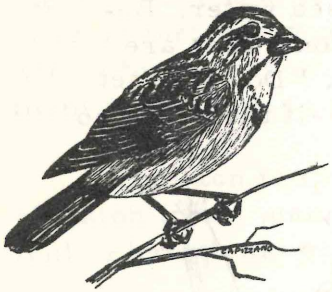


FIVE RARE FEEDER BIRDS

by BOB DEWIRE

During the winter season we find that our feeders draw in certain species of birds that we see every day. Once in a while something different may appear which has been forced to a feeding station because of low food supplies elsewhere or has strayed off course and finds itself in a different part of the country. Here are five such birds that you should watch for.

1. DICKCISSEL: You have to look very closely to spot this visitor from the West in your flocks of regular birds. He seems to prefer the rather shabby company of English sparrows and should be watched for when a flock of these sparrows is in your yard. Although the dickcissel male has a bright yellow front in the spring, it becomes a very faint yellow wash in fall and may not be visible at all. Besides the yellow, look at the throat which differs from the sparrow's in that it has a narrow black streak down each side. A chestnut colored patch on each wing is also absent on the sparrow. These birds undoubtably occur more frequently in winter flocks of English sparrows than is realized but are often overlooked or driven away with the sparrows.



2. WHITE-CROWNED SPARROW: Never a common bird in our area, it does pass through in the fall migration and may stay at a feeder. It is a large sparrow--the size of a white-throated sparrow, but it has a pink bill. Only the very small field sparrow has a similar pink bill. Young white-throats are often called white-crowns because they may lack the white-throat patch. They will not have the pink bill, however.

3. CAROLINA WREN: A southern wren that nests in Connecticut and occasionally winters here. When at a feeder it is attracted to suet or peanut butter. It is a large wren and may be mistaken for a small sparrow at first glance. The typical wren cocked-tail and long thin bill will eliminate all but the wren. The noticeable white stripe over the eye will further identify it as a Carolina wren.

4. RED-BREASTED NUTHATCH: A visitor from the North that regularly winters here in small numbers. Both suet and sunflower seed is attractive to them. The breast can hardly be called "red" and in some birds will be just a faint orange wash. The bird is very small compared to our common white-breasted nuthatch being closer to a chickadee in size. It behaves like the white-breasted nuthatch on tree trunks and the black stripe through the eye with white on either side is the best mark to look for.

5. RED-BELLIED WOODPECKER: A misnamed bird for it does not have a red belly. This is a bird of the South but reports of it in the northeast are increasing every year. It is a suet eater when coming to feeders. The head is the striking thing about the bird being a brilliant red from the top down the back of the neck. The breast is a buffy color and the back black and white.

Any one of these five is worth reporting to the Center if you should discover one at your feeding station.

ARTICLES OF ADULT INTEREST

We welcome notice of Conservation activities or problems for inclusion in this section of the Naturalist's Notebook .... Please let us know of your local activity so that others may be aware of your efforts and lend their support where possible....

FRIENDS OF THE CENTER: Four more of our members have become Friends of the Science Center. They are Miss Margaret Chaney, Mr. William Lyon, Miss Margaret Hazelwood, and Mr. Julius Strassburger.

CHRISTMAS HOLIDAYS: During the holiday season the Center will be closed from December 24th until 9:00 A.M. on December 28th and from December 31st until 9:00, January 4th.

GIFT MEMBERSHIP: With the holiday season at hand may we suggest a gift membership in the Science Center for a friend or relative. It is a gift that lasts through the year in the form of our Newsletter and programs. A gift card with the membership card indicating the giver's name will be sent.

CONNECTICUT'S ENVIRONMENTAL POLICY: The Governor's Committee on Environmental Policy was formed on January 15, 1970 to develop a comprehensive environmental policy for Connecticut. The report was completed on June 23, 1970 and the findings of the committee were published in a booklet entitled "An Environmental Policy for Connecticut". This report is a must for every conservation-minded citizen in the state. Free copies may be obtained by writing to the Governor's Committee on Environmental Policy, State Office Building, Hartford, Conn. 06115.

FROM THE EXECUTIVE DIRECTOR'S DESK . . . .

by ROBERT S. TREAT

On Sunday, November 1, members and friends of the Thames Science Center gathered to dedicate our new Interpretive Building, located in the Connecticut Arboretum on Gallows Lane. A large crowd came to celebrate and tour the structure which was designed by William L. Riddle of the Hartford Design Group and built by the Torrance Construction Co. of Norwich.

Preparations for the dedication were extensive both inside and out. John Stengel and Craig Vine of the Arboretum staff, and also members of the Center, did the landscaping. They devoted many hours searching for just the right plants and trees native to the area. The balance they have achieved has produced a marvelous blend of Connecticut flora with the natural cedar siding and wooden shingles of our new building. Inside, under the direction of Curator Martha Capizzano, a striking array of fall colors set the tone for the dedication.

The new Interpretive Building was dedicated to "the quest for a quality environment for southeastern Connecticut." It is a necessary and challenging goal which the Center must pursue with vigor and intelligence. Over the years we have been able to carry our programs into the schools, on field trips, day camps, assemblies and other activities in environmental education. Indeed, these activities radiated throughout the southeastern section of Connecticut. Due to the limitations of the old building, however, this effort went primarily in one direction.

Our new Interpretive Building with its offices, classroom, library, museum and display hall plus sales area, preparation room and an apartment for a staff member has opened up countless opportunities for the community to come to the Center. For instance, the Kempton Wing classroom will be used for workshops, sessions on environmental education, and as a meeting place for such organizations as the garden clubs. Our new librarian, Mrs. Stuart Hirschberg, devotes four mornings a week to building a modern resource center in the Rev. Clarence R. Wagner Library. Mrs. Malcolm D. MacGregor has agreed to develop our store into a source for field guides, bird feeders, binoculars and science related supplies, plus quality-selected books on ecology, natural science and the environment.

The Louise C. Howe Entry Hall and the Louis Darling Museum Wing are two excellent rooms for interpretive displays. Stephan B. Syz, a recent graduate of the University of California and a volunteer Assistant, and Ruth Ritter of Connecticut College, are helping to maintain and develop our live animal section, while Martha Capizzano is designing display areas for future exhibits. Finally, a new gate has been put in the Arboretum for use by the Center. Now all trips come directly to the Center, receive a brief orientation from a staff member and then continue to learn from a conducted field trip in the Arboretum.

Seeking a quality environment through education is our stated goal and with the new Interpretive Headquarters, our energetic and imaginative staff and the enthusiastic support of our members, your Science Center works hard to achieve this purpose.

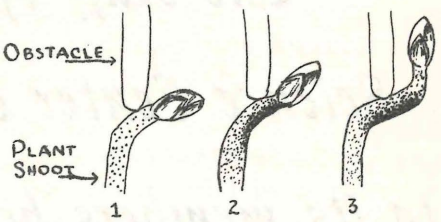
HOW DO PLANTS KEEP THEIR BALANCE?

by STEPHAN SYZ

Have you ever wondered how a tree grows upward and continues to keep balanced in spite of wind, heavy snow and new branches and leaves? Or how roots of many plants manage to grow downward in spite of obstacles like rocks and packed dirt? Many of us are so accustomed to seeing trees and plants growing as they do that we have never questioned how they do it. They have a simple, ingenious method.

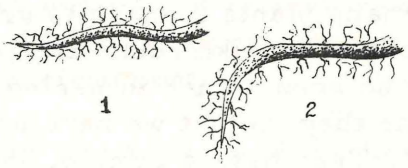
There are chemical hormones in plants called auxins. They control the speed at which cells grow. Plant cells grow faster, the more of these chemicals they get . . . up to a point. If they get too much their growth will be slowed down.

Now let's see how this works in a plant shoot. If you were to bend the shoot of a plant so that it is horizontal, you would find that the tip would begin to aim upward in a day or so. Scientists have discovered that when a plant is out of balance as in fig. 1 the pull of gravity causes the auxin concentration to increase on the down side of the stem (fig. 2). As a result, the cells on the bottom speed up growing and the plant bends upward (fig. 2 & 3).



This continues until the plant is growing straight up. Now the plant is again balanced and so is the concentration of the auxin on both sides of the plant. This tendency to bend up is called negative geotropism (geo: the Earth, tropism: a turning, negative: away from).

The story with roots is similar except that root cells are more sensitive. The normal amount of auxin already throughout the root is ideal for the fastest growth in the roots and any increase acts like an overdose and slows growth down. As can be seen in the drawing, the auxin is made more concentrated on the down side by gravity, but now the excess inhibits growth instead of speeding it up. The cells on the up side keep growing normally and thus the root heads down. This is called positive geotropism. (positive: towards the Earth.) Once laid down in this way the sheer strength of the root system keeps a tree upright during sudden snows and winds.



The staff of the Science Center extends to its members best wishes for a Happy Holiday Season.

An Introduction to Pollution

By MARTHA CAPIZZANO

"A JETPORT-CITY IN S.E. CONNECTICUT? NO!"

The jetport-industrial city complex is proposed for 75,000 acres of land on the Connecticut-Rhode Island border between Route I-95 and the Connecticut Turnpike (Route 52). It is being planned to accommodate both cargo and commercial jets, including the supersonic transport that can carry 1,000 passengers at one time. About 330,000 flights annually are projected ... that's 934 daily flights or approximately one flight every one and one-half minutes.

Although no exact location has been pinpointed for the complex, Sen. William B. Stanley who originated the idea, has stated that the land is scarcely populated. Glancing at a map will surely indicate that the scarcely populated area includes part or all of Pachaug State Forest (24,000 acres) and surrounding farm land.

Proponents of the jetport claim that the jetport-city complex will be air, water and noise pollution free, and that an ascending jet flying over the horizon will be as beautiful as a graceful white swan. The industries occupying the center of the complex will be "masterpieces of architecture surrounded by babbling brooks." Residential homes, occupied by 3-million inhabitants, according to a United Aircraft Report, would be outside the industrial area, and workers would be taken to their jobs by a mass transit system. Long distance commuters would travel via a rapid rail system between Providence, New Haven and the jetport city. Those who drove cars would park them in huge lots on the outer fringes of the city. This complex will increase land values and

enhance Pachaug where "back roads of the forest," states Mr. Stanley, "are littered with junk automobiles ... and you can walk on the water in eastern Connecticut because the rivers are polluted."

"Instant conservationists" as Mr. Stanley refers to us critics of the jetport "have to decide if people or squirrels come first."

Although this writer is not an instant conservationist, and most other critics are not, I nevertheless commend those opposed to the jetport who have become concerned with environmental deterioration only since the recent surge of ecological awareness. When will others learn that man is a part of nature and should work with it rather than against it? When will they become less naive to believe that a jetport of such magnitude (to be completed in over a 100-year span) will not be free of all pollution, and, in fact, will eradicate present pollution problems? Who will develop a noise free SST ... or any other non-polluting jet engine? Who will find a new method of removing ice and snow from runways and aircraft instead of continuing to use thousands of gallons of toxic anti-freeze in cold winter seasons? Considering that only five other cities in the U.S. have a population of over 1-million people, do we want--or need--a new city of millions of people in place of beautiful forest and farm land here in eastern Connecticut? Will this city be inhabited by super-humans who will be immune to pollution and to socio-economic problems?

Is this progress?

I prefer squirrels.

FIELD NOTES

Oct. 15 - Nov. 15

We had an early feel for winter on Oct. 17th when the first snowflakes fell, very heavily at times for a few brief minutes. The cold front and northwest winds that accompanied this early snow brought great numbers of birds on migration into the area. Woods were filled with WHITE-THROATED SPARROWS, and MYRTLE WARBLERS along with good numbers of both RUBY-CROWNED and GOLDEN-CROWNED KINGLETS and HERMIT THRUSHES.

Despite this early blast of cold the weather became mild enough to keep many of the reptiles and amphibians still alive. These included SPRING PEEPERS, WOOD FROGS, AMERICAN TOADS, PAINTED TURTLES, WATER SNAKES and GARTER SNAKES.

Old Saybrook and Old Lyme: RUDDY DUCKS were in South Cove in Saybrook on Nov. 1st. In Old Lyme a very late WOOD THRUSH was found on Nov 3rd and an always rare PILEATED WOODPECKER was seen on the 5th.

Niantic, Waterford, and New London: A male EUROPEAN WIDGEON was seen at Rocky Neck along with good numbers of PINTAILS and GREEN-WINGED TEAL on Oct. 21st. First arrivals for the winter included a FOX SPARROW at the Science Center on Oct. 17th, TREE SPARROWS at Waterford Beach on Nov. 3rd and RING-NECKED DUCKS at Lake Konomoc on Nov. 6th. A DOVEKIE was seen off Magonk Point on Oct. 31st and a late BLACKPOLL WARBLER was seen at the point on Nov. 9th. A COOPER'S HAWK was in the Arboretum on Oct. 19th. WOODCOCK staged an excellent flight on the weekend of Nov. 7th with 17 birds being found in one field in Montville.

Groton, Mystic and Stonington: First arriving migrants included BUFFLEHEADS in a pond on Route 184 in Old Mystic on Oct. 16th, HOODED MERGANSERS at the Groton Resevoir on Oct. 17th and PURPLE SANDPIPERS at Eastern Point on Nov. 2nd. Among late staying birds were a CANADA WARBLER at the Peace Sanctuary on Oct. 18th and an OSPREY at the Groton Resevoir on Nov. 7th. A DICKCISSEL was reported from a feeder on Shewville Road on Nov. 4th. A late GREY TREE FROG was found on Rt. 201 in Stonington on Nov. 11. A RED-BELLIED WOODPECKER is using a feeder on Valley Road in Groton.

Rhode Island Shoreline: The October 17th field trip to Napatree Point was an extremely successful one thanks to the cold front that came through. Highlights included an excellent hawk migration over the point with 45 SPARROW HAWKS, 10 PIGEON HAWKS, and 8 SHARP-SHINNED HAWKS seen. Hundreds of SCOTERS were migrating offshore. A SHORT-EARED OWL was also seen there along with a WHITE-RUMPED SANDPIPER and 17 OLDSQUAWS. On the 18th the first HORNED GREBE of the season was found at Napatree.

Contributors to this column were: Mr. and Mrs. Kenneth Bates, Grace Bissell, Martha Capizzano, Bob and Mary Jean Dewire, Kay Eastman, Helen Gilman, Barbara Goodwin, Rick Holloway, Walter Moran, Fritz Rohn, and Eloise Saunders.

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- ☐ A special gift toward support of the Science Center effort is included $ _____

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ACTIVITIES FOR DECEMBER

Saturday, December 5 ... 10:00 A.M. A Junior Members Workshop for Grades 1-3. "Making A Bird Feeder". Registration Required. Limit 15 children. No fee.

Saturday, December 12 ... 10:00 A.M. A Junior Members Workshop for Grades 2-6. "Making a Chrismas Wreath". Done in cooperation with the New London Garden Club. Registration required. Limit 20 children. No fee.

Sunday, December 13 ... 3:00 P.M. Family Film Festival held in the auditorium of the Lyman Allyn Museum. Walt Disney's "Nature's Half Acre" will be shown. Members free. Non-members are asked a 50¢ donation.

Saturday, December 19 ... 10:00 A.M. An Outing Club walk to Barn Island in Stonington. Meet at the State Boat Landing at the island.

Wednesday, December 23 ... Lyme-Saybrook Christmas Bird Census. People feeding birds between Hammonassett Park and Hawks Nest Beach north to Gillette's Castle may participate. For further information contact the Connecticut Audubon Council, Orchard Hill Road, Harwinton, Conn. 06790.

Sunday, December 27 ... New London Christmas Bird Census. People with feeding stations between Rocky Neck and Mason's Island north to Bartlett's Cove should count their birds on the 27th and phone the totals in to 443-6314.

NATURALIST NOTEBOOK

Published by the

THAMES SCIENCE CENTER

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The active support of children and adults in the Science Center, its programs, activities and efforts is earnestly solicited.

ROBERT DEWIRE
Editor

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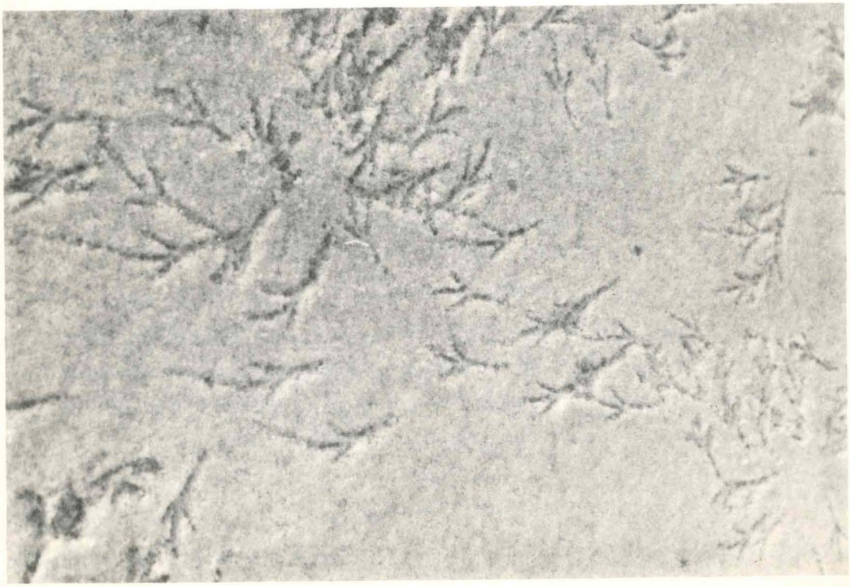

FOOT PRINTS IN THE SNOW

Photo by R. Dewire